

QSFP28, SPF28 AND QSFP+ OVERVIEW

OVERVIEW

The tables below list the QSFP28, SFP28 and QSFP+ transceivers and cable assemblies currently provided in the Smartoptics portfolio and with the most characteristic parameters. Please refer to the respective datasheets for more technical information.

GREY QSFP28 TRANSCEIVERS

Part number	Protocols	Dist	Wavelengths	Fiber	Conn	Standard / MSA	Pwr budget	FEC	Datasheet
SO-QSFP28-SR4	100GE	100m	4x 850nm	MM	1x MPO	100GBASE-SR4	4.3dB	Yes	Datasheet
SO-QSFP28-SR-BD	100GE	150m	2x 850/910nm	MM	2x LC	100G SRBD	1.5dB	No	Datasheet
SO-QSFP28-SWDM4	100GE	150m	850/880/910/940nm	MM	2x LC	100G SWDM4	1.8dB	Yes	Datasheet
SO-QSFP28-100G-DR	100GE	500m	1x 1311nm	MM	1x MPO	100G-DR	3.0dB	Yes	Datasheet
SO-QSFP28-PSM4	100GE	2km	4x 1310nm	SM	1x MPO	100G PSM4	4.7dB	Yes	Datasheet
SO-QSFP28-CWDM4	100GE	2km	1271/1291/1311/1331nm	SM	2x LC	100G CWDM4	5.0dB	Yes	Datasheet
SO-QSFP28-100G-FR	100GE	2km	1x 1311nm	SM	2x LC	100G-FR	4.0dB	Yes	Datasheet
SO-QSFP28-LR4	100GE/OTU4	10km	1296/1300/1304/1309nm	SM	2x LC	100GBASE-LR4 OTU4 4I1-9D1F	6.3dB	No	Datasheet
SO-QSFP28-100G-LR	100GE	10km	1x 1311nm	SM	2x LC	100G-LR	6.3dB	Yes	Datasheet
SO-QSFP28-LR4-10L	100GE	10km	1296/1300/1304/1309nm	SM	2x LC	100GBASE-LR4	6.3dB	No	Datasheet
SO-QSFP28-LR4-20L	100GE	20km	1296/1300/1304/1309nm	SM	2x LC	100GBASE-LR4	8.1dB	No	Datasheet
SO-QSFP28-LR4-20D	100GE/OTU4	20km	1296/1300/1304/1309nm	SM	2x LC	100G 4WDM-20 OTU4 4I1-9D1F	12dB	Yes	Datasheet
SO-QSFP28-ER4 ¹⁾	100GE	30km	1296/1300/1304/1309nm	SM	2x LC	100GBASE-ER4	16dB	No	Datasheet
SO-QSFP28-ER4 ¹⁾	100GE	40km	1296/1300/1304/1309nm	SM	2x LC	100G 4WDM-40	18dB	Yes	Datasheet
SO-QSFP28-ZR4	100GE	80km	1296/1300/1304/1309nm	SM	2x LC	100G-ZR4	31dB	Yes	Datasheet

¹⁾ SO-QSFP28-ER4 can operate with or without FEC

Dist: Typical distance, normally based on dispersion properties.

Pwr budget: Difference between average min Tx power and Rx sensitivity. Dispersion/path penalties not taken into account.

FEC: If FEC is required in host equipment for performance @ 100GE. The OTU4 frame includes FEC.

CWDM QSFP28 TRANSCEIVERS

Part number	Protocols	Dist	Wavelengths	Fiber	Conn	Standard / MSA	Pwr budget	FEC	Datasheet
SO-QSFP28-100G-FRx	100GE	2km	1271 – 1331nm (4ch)	SM	2x LC	-	4dB	Yes	Datasheet
SO-QSFP28-100G-LRx	100GE	10km	1271 – 1331nm (4ch)	SM	2x LC	-	6.3dB	Yes	Datasheet

DWDM QSFP28 TRANSCEIVERS

Part number	Protocols	Dist	Wavelengths	Fiber	Conn	Standard / MSA	Pwr budget	FEC	Datasheet
SO-QSFP28-Dxx	100GE	-	D9200 – D9600 (41ch)	SM	2x LC	-	9dB	No	Datasheet

This transceiver uses two PAM4 modulated sub-channels per 100GHz grid and with integrated FEC. Requires a DCP Open Line System to operate up to 80km.

QSFP28 CABLE ASSEMBLIES

Part number	Protocols	Lengths	Type	Connectors	Datasheet
SO-QSFP28-PCUxM	100GE	0.5m – 5m	DAC, Passive	QSFP28 ↔ QSFP28	Datasheet
SO-QSFP28-4SFP28-PCUxM	100GE	1m – 5m	DAC, Passive	QSFP28 ↔ 4x SFP28	Datasheet
SO-QSFP28-AOCxM	100GE	1m – 70m	AOC	QSFP28 ↔ QSFP28	Datasheet
SO-QSFP28-4XSFP28-AOCxM	100GE	1m – 70m	AOC	QSFP28 ↔ 4x SFP28	Datasheet

GREY SFP28 TRANSCEIVERS

Part number	Protocols	Dist	Wavelengths	Fiber	Conn	Standard / MSA	Pwr budget	FEC	Datasheet
SO-SFP28-SR	25GE	100m	1x 850nm	MM	2x LC	25GBASE-SR	1.9dB	Yes	Datasheet
SO-SFP28-LR	25GE/CPRI-10/ 10GbE-LAN	10km	1x 1310nm	SM	2x LC	-	5.5dB	Yes	Datasheet
SO-SFP28-BX10D-2733-I	25GE/CPRI-10	10km	Tx/Rx=1270/1330nm	SM	1x LC	-	11.5dB	Yes	Datasheet
SO-SFP28-BX10D-3327-I	25GE/CPRI-10	10km	Tx/Rx=1330/1270nm	SM	1x LC	-	11.5dB	Yes	Datasheet
SO-SFP28-BX20D-2733-I	25GE/CPRI-10	20km	Tx/Rx=1270/1330nm	SM	1x LC	-	14.5dB	Yes	Datasheet
SO-SFP28-BX20D-3327-I	25GE/CPRI-10	20km	Tx/Rx=1330/1270nm	SM	1x LC	-	14.5dB	Yes	Datasheet
SO-SFP28-BX40D-2731-I	25GE/CPRI-10	40km	Tx/Rx=1270/1310nm	SM	1x LC	-	19dB	Yes	Datasheet
SO-SFP28-BX40D-3127-I	25GE/CPRI-10	40km	Tx/Rx=1310/1270nm	SM	1x LC	-	19dB	Yes	Datasheet
SO-SFP28-32GFC-SD	32G FC / 25GE	100m	1x 850nm	MM	2x LC	3200-SN (FC-PI-6)	7dB / 1.9dB	Yes	Datasheet
SO-SFP28-32GFC-LD	32G/16G/8G FC 25GE	10km	1x 1310nm	SM	2x LC	-	9.4dB	Yes	Datasheet

Dist: Typical distance, normally based on dispersion properties.

Pwr budget: Difference between average min Tx power and Rx sensitivity. Dispersion/path penalties not taken into account.

FEC: If FEC is required in host equipment for performance @ 32G/25GE.

CWDM / DWDM / LANWDM SFP28 TRANSCEIVERS

Part number	Protocols	Dist	Wavelengths	Fiber	Conn	Standard / MSA	Pwr budget	FEC	Datasheet
SO-SFP28-32GFC-LR10-Cxx	32G FC 25GE/10GE	10km	1271/1291/1311/1331nm (4ch)	SM	2x LC	-	9.4dB	Yes	Datasheet
SO-SFP28-L10-Dxxxx-I	25GE/CPRI-10	10km	D9200 – D9600 (41ch)	SM	2x LC	-	13dB	Yes	Datasheet
SO-SFP28-L10E-Dxxxx-I	25GE/CPRI-10	10km	D9200 – D9600 (41ch)	SM	2x LC	-	18dB	Yes	Datasheet
SO-SFP28-LWDM-x-E	25GE/CPRI-10	30km	1277.89 - 1309.14nm (8ch)	SM	2x LC	-	21dB	Yes	Datasheet

Dist: Typical distance, normally based on dispersion properties.

Pwr budget: Difference between average min Tx power and Rx sensitivity. Dispersion/path penalties not taken into account.

FEC: If FEC is required in host equipment for performance @ 25GE.

SFP28 CABLE ASSEMBLIES

Part number	Protocols	Lengths	Type	Connectors	Datasheet
SO-SFP28-PCUxM	25GE	0.5m – 5m	DAC, Passive	SFP28 ↔ SFP28	Datasheet
SO-SFP28-AOCxM	25GE	1m – 30m	AOC	SFP28 ↔ SFP28	Datasheet

GREY QSFP+ TRANSCEIVERS

Part number	Protocols	Dist	Wavelengths	Fiber	Conn	Standard / MSA	Pwr budget	FEC	Datasheet
SO-QSFP-SR4	40GE	150m	4x 850nm	MM	2x LC	40GBASE-SR4	1.9dB	No	Datasheet
SO-QSFP-ESR4	40GE	400m	4x 850nm	SM	1x MPO	40GBASE-eSR4	1.9dB	No	Datasheet
SO-QSFP-SR-BD	40GE	150m	2x 850/900nm	MM	2x LC	40G SRBD	6.1dB	No	Datasheet
SO-QSFP-LX4	40GE	2km	1271/1291/1311/1331nm	SM	2x LC	40GBASE-IR4	4.5dB	No	Datasheet
SO-QSFP-LR4-PSM	40GE, 4x 10GE	10km	4x 1310nm	SM	1x MPO	40GBASE-LR4	6.6dB	No	Datasheet
SO-QSFP-LR4	40GE, OTU3	10km	1271/1291/1311/1331nm	SM	2x LC	40GBASE-LR4	6.7dB	No	Datasheet
SO-QSFP-LR4-20	40GE	20km	1271/1291/1311/1331nm	SM	2x LC	40GBASE-LR4	10.2dB	No	Datasheet
SO-QSFP-ER4	40GE, OTU3	40km	1271/1291/1311/1331nm	SM	2x LC	40GBASE-ER4	18.5dB	No	Datasheet
SO-QSFP-IR4-PSM	40GE	2km	4x 1310nm	SM	2x LC	40GBASE-IR4	7.4dB	No	Datasheet

QSFP+ CABLE ASSEMBLIES

Part number	Protocols	Lengths	Type	Connectors	Datasheet
SO-QSFP-40G-PCUxM	40GE	1m – 5m	DAC, Passive	QSFP+ ↔ QSFP+	Datasheet
SO-QSFP-40G-ACUxM	40GE	3m – 10m	DAC, Active	QSFP+ ↔ QSFP+	Datasheet
SO-QSFP-4SFP-PCUxM	40GE, 10GE	1m – 3m	DAC, Passive	QSFP+ ↔ 4x SFP+	Datasheet
SO-QSFP-4SFP-ACUxM	40GE, 10GE	3m – 10m	DAC, Active	QSFP+ ↔ 4x SFP+	Datasheet
SO-QSFP-40G-AOCxM	40GE	1m – 100m	AOC	QSFP+ ↔ QSFP+	Datasheet
SO-QSFP-4X10G-AOCxM	40GE, 10GE	1m – 100m	AOC	QSFP+ ↔ 4x SFP+	Datasheet